Mon Feb 21 20:35:14 EST 2022
EPAExecSec <EPAExecSec@epa.gov>
FW: Planned industrial air pollution in Washington, D.C. neighborhood - Please Review
To: "CMS.OEX" <cms.oex@epa.gov>

Reading file

From: Whelton, Andrew J <awhelton@purdue.edu>
Sent: Monday, February 21, 2022 11:49 AM
To: Freedhoff, Michal <Freedhoff.Michal@epa.gov>; Goffman, Joseph <Goffman.Joseph@epa.gov>; Regan, Michael <Regan.Michael@epa.gov>
Subject: Re: Planned industrial air pollution in Washington, D.C. neighborhood - Please Review

Dear All,

I apologize for the repeat submission. There were typos in the previous PDF I sent at 10:47am today.

Sincerely,

Andrew

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Andrew J. Whelton, Ph.D.
Professor of Civil, Environmental, and Ecological Engineering
Lyles School of Civil Engineering, Environmental and Ecological Engineering

Director, Healthy Plumbing Consortium and Center for Plumbing Safety

550 Stadium Mall Drive, Purdue University, West Lafayette, IN USA 47907

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From: Whelton, Andrew J <awhelton@purdue.edu>
Sent: Monday, February 21, 2022 10:26 AM
To: freedhoff.michal@epa.gov <freedhoff.michal@epa.gov>; Goffman.Joseph@epa.gov <Goffman.Joseph@epa.gov>; Regan.Michael@epa.gov <Regan.Michael@epa.gov>
Subject: Planned industrial air pollution in Washington, D.C. neighborhood - Please Review

Dear Administrator Reagan, Assistant Administrators Goffman and Freedhoff:

I am uncertain if I will get a response, but I am sending this message anyways. The issue at hand has national health and environmental ramifications and is exactly what I notified you about approximately 11 months ago.

I encourage the EPA to engage the Washington, D.C. Department of Energy and the Environment (DOEE) in support of their ongoing industrial air pollution discharge evaluation for the Soapstone Valley Park neighborhood. The Soapstone project involves utilizing an outdoor plastic pipe manufacturing practice called cured-in-place-pipe (CIPP) to fix a leaking sewer line in a federal park bordered by a residential area and at least 1 school. A single CIPP project can release tens to hundreds of tons of regulated air pollutants directly into the environment and nearby infrastructure. CIPP air pollution has caused preventable human health and environmental injuries nationwide - the Clean Air Act is not being applied.

Please do not hesitate to contact me. I have included 1 PDF document with a letter explaining the Washington, D.C. Soapstone Valley Park issue and the broader national issue pertaining to air pollution caused by outdoor manufacture of plastic pipes.

Sincerely,

Andrew

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CIPP Solutions at http://www.CIPPSafety.org

Follow us on Twitter @TheWheltonGroup

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Administrator Michael S. Regan
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W., Washington, DC 20460

cc: Joseph Goffman, Office of Air and Radiation
Michal Ilana Freedhoff, Office of Chemical Safety and Pollution Prevention

February 21, 2022

Dear Administrator Regan:

I encourage the EPA to engage the Washington, D.C. Department of Energy and the Environment (DOEE) in support of their ongoing industrial air pollution discharge evaluation for the Soapstone Valley Park neighborhood. The issue has national health and environmental ramifications and is exactly what I notified you about March 30, 2021. The Soapstone project involves utilizing an outdoor plastic pipe manufacturing practice called cured-in-place-pipe (CIPP) to fix a potentially leaking sewer line in a federal park bordered by a residential area and at least 1 school. A single CIPP project can release tens to hundreds of tons of regulated air pollutants directly into the environment and nearby infrastructure. CIPP air pollution has caused preventable human health and environmental injuries nationwide - the *Clean Air Act* is not being applied.

In July 2021, I was first contacted about the Soapstone issue by community members. Since then I have encouraged members to read our CIPP environmental and human health impact peer-reviewed studies, available state health department factsheets, ATSDR and NIOSH reports. Our CIPP environmental and worker safety studies were funded by FHWA.gov, NSF.gov, NIEHS.gov, NIOSH.gov and EPA.gov (www.CIPPSafety.org). Community members have intermittently reached out asking CIPP topic questions.

On February 17, 2022 the community was told by the National Parks Service (NPS) and DC Water (the pipe owner) that construction is beginning, CIPP will be used, but some untrue statements about CIPP safety and environmental impacts were also conveyed. DOEE was present in that meeting. The NPS clarified that their Environmental Assessment for the National Environmental Policy Act (NEPA) did not consider an air pollution evaluation of the CIPP Soapstone alternative, yet a FONSI was issued. *I am concerned harm that's been caused across the nation will occur in Washington, D.C. because of a failure to understand and minimize the pollution that is planned.* In December 2021, 64 children and adults at a Wisconsin school were harmed by nearby CIPP operations leading some to hospitalization (Wisconsin 2021). My team has documented hundreds of other building evacuations, bystander injuries, an indoor basement explosion and first degree burn, fish kills, and more. These incidents often occurred because CIPP contractors (with implicit consent of the pipe owner) discharged air pollution into the environment.

The scale of CIPP project air pollution can be staggering. Some single CIPP projects have involved 454,000 kg (1 million pounds) of resin, and we have estimated even when only 3% of VOCs are released that's roughly 13,620 kg (30,000 pounds) discharged into the air. In our own studies, we discovered all CIPP methods (steam, hot water, UV) release pollutants into the air. Material SDSs do not list all of the hazardous air pollutants (HAP) in resins or are created and discharged *during* manufacture. Raw materials are vaguely referred to as styrene-based vs. non-styrene based resins and volatile organic compound (VOC) vs. no-VOC resins, but HAPs like styrene, benzene, methylene chloride, phenol, and many others can be released, along with semi-volatile organic compounds (SVOC), among others. Some wastes discharged into the air

include uncured resin, partially cured plastic, particulate matter, VOC/HAP vapors, and VOC/HAP saturated water vapor. CIPP projects with nonstyrene resins discharge air pollutants. Epoxy resin contains epichlorohydrin, a HAP, among other chemicals. New York State previously found that even when hot water CIPP was used, air pollution still occurred. As our publicly funded studies have shown, the CIPP industry and their agents (including many municipalities and consultants) do not understand the type and magnitude of pollution caused by their practices. After our 2017 study, the CIPP industry claimed our 2017 finding of immediate dangerous life and health risks was unfounded, but years later disclosed styrene exceeded 1800 pm exiting a truck trailer where they commonly sent in workers without respirators.

As communities fix leaking pipes, I urge you to prevent harm to bystanders and the environment by enforcing your *Clean Air Act* authority and assist primacy agencies like DOEE and others. We cannot go back and prevent the harm to children in Wisconsin, or at Zamorano Elementary (CA), Riverview Elementary (WA), Seneca Falls Middle School (NY), Veterans Memorial Elementary (MA), New Kensington Elementary and High Schools (PA), daycares (MA), Birmingham High School (MI), or the many others. We cannot prevent prior harm to unsuspecting bystanders in their homes or nearby commercial buildings. Moving forward, harm can be prevented in Washington, D.C. and nationwide with attention to enforcing the *Clean Air Act* so our pipes can be fixed without harming the public or the environment. I sincerely encourage you to help DOEE and primacy agencies nationwide with this widespread and increasingly serious health and environmental problem. Please feel free to contact me if you have any questions at awhelton@purdue.edu.

Sincerely,

Andrew Whelton, Ph.D.
Professor
Lyles School of Civil Engineering
Division of Environmental and Ecological Engineering
Director, Center for Plumbing Safety and the Healthy Plumbing Consortium

Reference:

March 31, 2021 Submittal to Secretary Regan regarding Environmental Impacts of CIPP caused by Pipe Repair Projects (sent by certified mail and received)

1. Cover Letter
2. Images Pertaining to CIPP and Workers
3. Chain of Events Pertaining to CIPP and Workers
4. Federal Documents on the Topic of CIPP
5. State Documents on the Topic of CIPP
6. Purdue University Team Studies on the Topic of CIPP

Since March 2021, NIOSH and Purdue have published additional CIPP studies.

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Secretary Michael S. Regan

U.S. Environmental Protection Agency

1200 Pennsylvania Avenue, N.W., Washington, DC 20460

cc: Michal Ilana Freedhoff, Acting Assistant Administrator, Off. Chem. Safety and Pollution Prevention

March 31, 2021

Dear Secretary Regan:

I am a Purdue University professor and writing to ask that you please consider taking action to protect the environment, nearby populations, and the safety of workers involved in the cured-in-place-pipe (CIPP) pipeline repair practice. The CIPP practice, also referred to as pipe lining and sewer lining, involves the outdoor manufacture of plastic composite pipes inside existing damaged pipes. This process is increasingly being used nationwide to repair sanitary sewer pipes, storm sewer pipes, drinking water pipes, and indoor plumbing. I am concerned that significant environmental damage, worker and population health impacts will continue to occur if oversight is not provided and changes are not made. Enclosed are materials that I delivered to OSHA, and most apply to this letter. The CIPP practice can likely be used without jeopardizing human health and the environment if appropriate controls were implemented. At present, they are not.

I believe there are gaps in U.S. EPA's application and enforcement of Clean Air Act and Clean Water Act requirements that apply to the CIPP construction practice. The practice involves popup temporary worksites where general construction and plumbing company workers move from manhole to manhole, city to city, state to state, and sometimes multiple locations per day. CIPP worker crews 'cure' or 'cook' raw resin creating a new plastic pipe. This practice can be 60-80% less costly than other alternatives and is being adopted by municipalities, utilities, and transportation agencies. Some CIPP projects are in direct response to Clean Water Act sewer overflow consent orders. Steam and hot water curing methods are the most popular (least expensive), followed by ultraviolet light. Based on the Code of Federal Regulations, it seems that CIPP installations may be "stationary sources" as they emit pollutants listed under section 112 (b) of the Clean Air Act.[1]

The CIPP construction practice seems to have gone unregulated and unmonitored from an environmental perspective, and this is in conflict with U.S. EPA's Boat Manufacturing and the Reinforced Plastic Composites Production source categories regulated under national emission standards for hazardous air pollutants (NESHAP)[2]. CIPP manufacturing sites use similar resins and discharge volatile organic compound (VOC) hazardous air pollutants (HAP) like styrene, benzene, methylene chloride and semi-volatile organic compounds (SVOCs) into ambient air. Many are regulated Clean Air Act air pollutants. In our 2017 study we captured the CIPP wastes being discharged into air at Indiana and California worksites. We found uncured resin, partially cured plastic, particulate matter, VOC/HAP vapors, and VOC/HAP saturated water vapor being emitted.[3] Our new study (enclosed) indicates "tons" of organic vapors may be discharged – *per project*[4]. Without intervention, CIPP caused pollution will continue. In 2020, the CIPP industry trade association recommended that companies increase air flow during plastic manufacture so that the generated waste material left behind is minimized.

There is a long precedent that CIPP companies have directly discharged untreated waste and pollutants into waterways[5] seemingly without NPDES permits. Our recent Federal Highway Administration study documented

[1] 40 CFR § 70.2 "Stationary source means any building, structure, facility, or installation that emits or may emit any regulated air pollutant or any pollutant listed under section 112 (b) of the Clean Air Act."
[2] U.S. EPA. *Boat Manufacturing National Emission Standards.* https://www.epa.gov/stationary-sources-air-pollution/boat-manufacturing-national-emission-standards-hazardous-air
[3] Teimouri et al. 2017. *Environ. Sci. Technol. Letters.* https://doi.org/10.1021/acs.estlett.7b00237 (enclosed in package)
[4] Teimouri et al. 2020. *Environ. Sci. Wat. Res. Technol.* https://doi.org/10.1039/D0EM00190B (enclosed in package)
[5] U.S. Federal Highway Administration (FHWA). 2019. *Contaminant release from storm water culvert rehabilitation technologies: Understanding implications to the environment and long-term material integrity, pooled fund-5(339).* Prepared by: Whelton et al. https://www.doi.org/10.5703/1288284317089 (enclosed)

some fish kills caused by the discharge of hazardous materials into the environment across multiple states (Table 1). Contamination has impacted drinking water surface water and ground water sources and prompted temporary state-level CIPP technology bans and multi-state agency investigations[6]. It is my understanding none of these discharges were NPDES permitted under the Clean Water Act[7]. At least one criminal investigation was opened in by the Pennsylvania Fish and Boat Commission after a trout stream fish kill. State backed 2014 testing results have shown that CIPP waste dissolved *D. magna* organisms at room temperature in 24 hours, levels were upwards of 15,300 ppm styrene, and when diluted by a factor of 10,000 other non-styrene chemicals were responsible for toxicity[8] (study enclosed). Until 2020, CIPP workers had been encouraged by a decades old widely distributed CIPP construction practice guide to dispose of their liquid wastes into "stream and ditches". I suspect many CIPP workers are not familiar with the intricacies of Clean Water Act requirements so some sort of direct engagement and oversight from U.S. EPA and/or state primacy agencies is likely warranted.

In my experience, CIPP workers are not adequately aware of the chemicals they are handling, creating onsite, discharging, nor do they have appropriate training or PPE to protect themselves. In 2017, my U.S. National Science Foundation backed team uncovered imminent safety hazards and widespread misinformation being given to workers about their chemical exposures. Multiple studies now show material safety data sheets (SDS) used for resin and CIPP do not adequately convey the full scope of the materials used, created onsite, and discharged into the environment. I have personally witnessed workers leaving resin in waterways after they have installed a new storm sewer CIPP. I have been told the new plastic is inert and does not leach (not true). I have been called for help by state environmental agencies, natural resource, transportation agencies, and even criminal investigators. I have been told by state Clean Water Act primacy agencies, municipalities, and consulting engineers that styrene is the only chemical of concern (not true) and it's never been found at high levels (not true). Construction inspectors and specifications lack information needed to discourage this pollution. It is my understanding that when seeking State Revolving loan Funds (SRF) to comply with sanitary sewer overflow consent orders, infrastructure owners (applicants) declare CIPP poses no risk to environment, when it most certainly can and there's evidence it has.

I request that you consider enforcing your environmental protection and public safety authority. Workers from engineering firms and municipalities who oversee this plastic manufacturing practice do not understand the environmental and health risks. I have been told by some municipalities that "unless EPA says they have to do something, [we] won't do anything different because it will likely cost more money." At a minimum, I do not think it's unreasonable for U.S. EPA to formally document the scale of environmental impacts associated with CIPP waste discharge and the non-enforced or lacking regulatory framework. Years ago the fiberglass boat manufacturers were found to be subject to Air Toxics Standards[9]. It would seem these may apply to CIPP, especially since CIPP worksites are springing up in neighborhoods nationwide where children and other populations are being exposed. Secondary organic aerosol and ozone formation due to the emitted primary pollutants may also be issues.

I welcome the opportunity to work with you and your staff to improve environmental and human health protection. I can be reached at awhelton@purdue.edu and (765) 494-2160. Additional information about CIPP can be found on the www.CIPPSafety.org public website my team setup to help workers, the public, and government officials. This website includes a list of all of chemical exposure incidents I know about so far, but I am certain there have been more.

Sincerely,

Andrew Whelton, Ph.D.

Lyles School of Civil Engineering, Division of Environmental and Ecological Engineering

Enclosure

Package submitted to OSHA, U.S. Senate and House of Representatives Committees that includes (a) Images pertaining to CIPP and workers, (b) Chain of events for CIPP pertaining to workers, (c) Federal documents on the topic of CIPP, (d) State documents on the topic of CIPP, and (e) Purdue University research team peer-reviewed scientific studies related to CIPP

[6] Ra et al. 2018. *J. Am. Water Works Assoc.* https://doi.org/10.1002/awwa.1042 (enclosed in package)
[7] 40 CFR Part 122 - EPA Administered Permit Programs: The National Pollutant Discharge Elimination System
[8] Tabor et al. 2014. *Environ. Sci. Technol.* https://doi.org/10.1021/es5018637 (enclosed in package)
[9] U.S. EPA. *Boat Manufacturing National Emission Standards.* https://www.epa.gov/stationary-sources-air-pollution/boat-manufacturing-national-emission-standards-hazardous-air